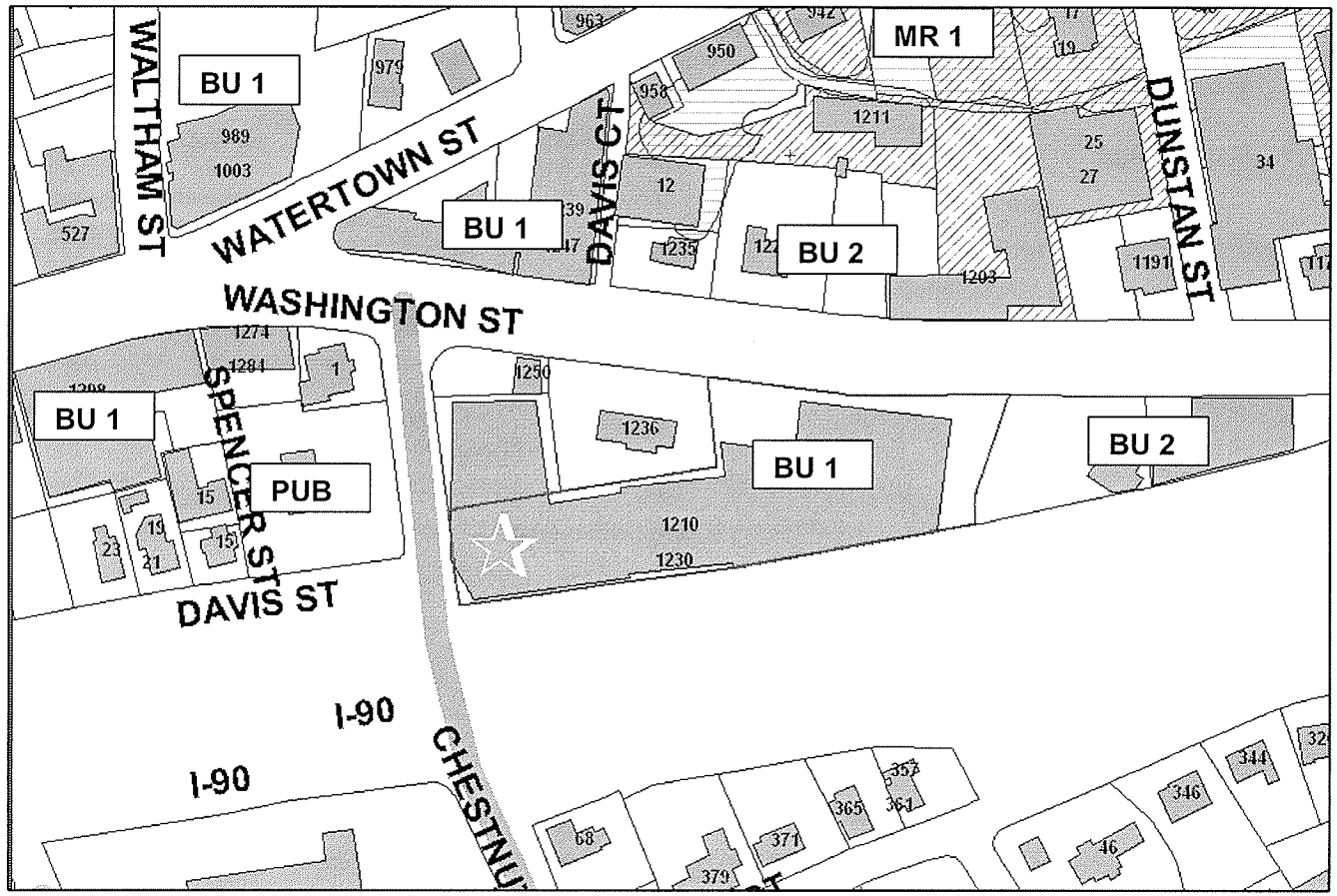


VICINITY MAP

ATTACHMENT B

CITY OF NEWTON, MASSACHUSETTS

Department of Planning and Development
Michael J. Kruse, Director

David B. Cohen
Mayor

Telephone
(617)-796-1120
Telefax
(617) 796-1142
E-mail
mkruse@newtonma.gov

Public Hearing Date:	May 19, 2009
Land Use Action Date:	June 16, 2009
Board of Aldermen Action Date:	July 13, 2009
90-Day Expiration Date:	August 17, 2009

DATE: May 14, 2009

TO: Board of Aldermen

FROM: Michael Kruse, Director of Planning and Development
Candace Havens, Chief Planner
Maurya Sullivan, Principal Planner/Telecommunications Specialist

SUBJECT: #102-09 VIDEOLINK, INC., HAROLD MILLER AND DIV WASHINGTON STREET petition for a SPECIAL PERMIT/SITE PLAN APPROVAL to install two commercial satellite earth station antennas exceeding two meters in diameter on the roof of an existing parking structure at 1210 AND 1230 WASHINGTON STREET, West Newton, Ward 3, on land known as Section 31, Block 4, Lot 13 and Section 31, Block 4, Lot 15 containing an approximate total of 93,182 square feet of land in a district zoned BUSINESS 1.

CC: Mayor David B. Cohen

The purpose of this memorandum is to provide the Board of Aldermen and the public with technical information and planning analysis which may be useful in the special permit decision making process of the Board of Aldermen. The Planning Department's intention is to provide a balanced view of the issues with the information it has at the time of the public hearing. There may be other information presented at or after the public hearing that the Land Use Committee of the Board of Aldermen will want to consider in its discussion at a subsequent Working Session.

EXECUTIVE SUMMARY

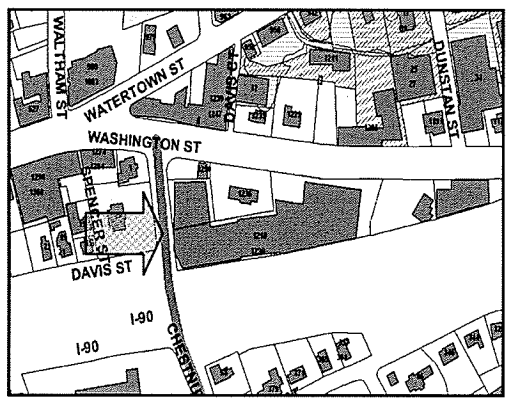
Videolink, Inc. is a provider of broadcast video production and transmission services to major worldwide television networks. Currently, Videolink has two satellite earth station antennas on the roof of the parking garage (each under two meters in diameter and allowed as of right). Videolink seeks to add two satellite earth station antennas each up to 3.8 meters in diameter. The antennas are located within a railed area above the garage stairwell and will not affect the number of parking spaces. The applicant seeks approval pursuant to Section 30-18A(e)(5), *Wireless Communication Equipment Allowed by Special Permit* because the proposed additional satellite earth station antennas exceed two meters in diameter.

I. SIGNIFICANT ISSUES FOR CONSIDERATION

In reviewing this petition the Board should consider whether the proposed location is appropriate for satellite earth station antennas exceeding two meters in diameter.

II. CHARACTERISTICS OF THE SITE AND NEIGHBORHOOD

The property consists of two lots containing a three-story office building and attached parking garage in West Newton at the corner of Washington and Chestnut Streets. The building sits between Washington Street and the MassTurnpike. The site is in a Business 1 District, and is adjacent to the West Newton Square business area. Directly across Chestnut Street is the Police Annex Building, which is located in a Public Use District. Across the MassTurnpike to the south is a large and mostly residential neighborhood.



III. PROJECT DESCRIPTION AND ANALYSIS

A. Land Use

The subject site includes an office building with an attached two story parking structure. The addition of two satellite earth station antennas to the roof of the parking structure will not change the use of the site. Currently, Videolink has two satellite earth station antennas on the roof of the parking garage (each under two meters in diameter and allowed as-of-right). Based on the petitioner's Statement of Need ***(ATTACHMENT "C")***, the additional antennas are required to allow transmissions to a wider range of satellite repeaters.

B. Building and Site Design

The petitioner proposes to install two satellite earth station antennas on the roof of the parking garage in an area enclosed by railing. Two "by-right" satellite earth station antennas (less than two meters in diameter) are already located in this area. The antennas will be in obvious view from the roof of the parking garage but will not be particularly visible from any other vantage point.

C. Parking and Circulation

The proposal is for unmanned antennas. As such, there should be no hazard to vehicles or pedestrians associated with this proposal. The antennas are proposed to be located on the roof of the parking structure and will not impact or diminish the existing parking capacity. A dedicated parking space on-site is not necessary.

IV. COMPREHENSIVE PLAN

There is no discussion of antenna installations in the *Newton Comprehensive Plan*, adopted by the Board of Aldermen on November 19, 2007. However, the existing Videolink business contributes to the vitality of the West Newton village center.

V. ZONING RELIEF SOUGHT

Based on the completed zoning review, dated February 17, 2009 ***(ATTACHMENT "A")***, the petitioners are seeking approval through or relief from:

- § 30-18A(e)(5) allows the Board of Aldermen to grant a special permit for satellite earth station antennas ***exceeding two meters in diameter***; and,
- § 30-18A(f) and 30-23 allow the Board of Aldermen to grant Site Plan Approval.

VI. OTHER REVIEWS

A. Newton Historical Commission. Historical Commission staff has visited the site and surrounding areas and determined that the installation should have no impact on historic districts or resources.

B. Compliance with State and Federal Guidelines. The petitioner has submitted an analysis ***(ATTACHMENT "D")***, demonstrating that radio frequency emissions from the satellite antennas are within the State and Federal guidelines for public exposure.

C. Compliance with Noise Ordinance. Petitioner has submitted an acoustical study ***(ATTACHMENT "E")*** demonstrating compliance with the Noise Ordinance, Section 20-13.

VII. PETITIONER'S RESPONSBILITIES

The petition is considered complete at this time.

ATTACHMENTS:

ATTACHMENT A: *ZONING REVIEW MEMORANDUM, DATED FEBRUARY 17, 2009*
ATTACHMENT B: *VICINITY MAP*
ATTACHMENT C: *STATEMENT OF NEED*
ATTACHMENT D: *RADIO FREQUENCY EMISSIONS ANALYSIS, PREPARED BY DONALD L. HAES, JR., PH.D, DATED OCTOBER 20, 2008*
ATTACHMENT E: *NOISE ASSESSMENT FROM L.G. COPLEY ASSOCIATES, DATED APRIL 23, 2009*

ATTACHMENT A

Zoning Review Memorandum

Proposed Wireless Communication Installation

Date: February 17, 2009

To: John Lojek, Commissioner of Inspectional Services

From: Candace Havens, Chief Planner
Maurya Sullivan, Principal Planner/Telecommunications Specialist

cc: Mike Kruse, Director of Planning and Development
Eve Tapper, Chief Zoning Code Official
Luis P. Cetrangolo, Dooling Woodbrier Architects, Inc.

Re: Proposed installation of two rooftop Satellite Earth Station Antennas in BU1 District

Applicant: Videolink, Inc.		
Site: 1210-1230 Washington Street	**SBL:** 31-4-13	**Lot Area:** 79,093 sq ft
Zoning: BU-1	**SBL:** 31-4-15	**Lot Area:** 14,089 sq ft
Current Use: Office Building, Parking Garage and Wireless Communications	**Proposed Use:** Office Building, Parking Garage and Wireless Communications	

Type of Wireless Installation:
Commercial satellite earth station antennas exceeding two meters in diameter per Section 30-18A(e)(5).

Background:
The property consists of two lots containing a three-story office building and attached parking garage. Videolink, Inc. is a provider of broadcast video production and transmission services to major worldwide networks. Currently, Videolink has two satellite earth station antennas on the roof of the parking garage (each under two meters in diameter and allowed as of right). Videolink seeks to add two satellite earth station antennas each up to 3.8 meters in diameter. The applicant seeks approval pursuant to Section 30-18A(e)(5), *Wireless Communication Equipment Allowed by Special Permit* because the proposed additional satellite earth station antennas exceed two meters in diameter.

Administrative determinations:
- Section 30-18A(e)(5) requires a special permit for commercial satellite earth station antennas exceeding two meters in diameter.
- Sections 30-18A(f) and 30-24 require site plan review.
- The applicant has submitted a copy of the application to the Director of Planning and Development for Administrative Site Plan review, per Section 30-18A(g) for compliance with Section 30-18A(c).
- 30-18A(c)(12) requires a report from a qualified professional indicating compliance with Federal and Massachusetts laws and regulations pertaining to radio frequency emissions. The report submitted by the applicant indicates all equipment will meet required standards.
- See table "Zoning Relief Summary" below.

Ordinance	*Zoning Relief Summary*	*Action Required*
	Wireless Communication Installation	
30-18A(e)(5)	Commercial satellite earth station antennas exceeding two meters in diameter.	SP per §30-24
	Site	
30-18A(f)	Approval of site plan per §30-23	X

ATTACHMENT C

STATEMENT OF NEED

VideoLink, headquartered at 1230 Washington Street in West Newton, MA, is a leading provider of broadcast video production and transmission services to major worldwide networks and corporations. VideoLink is also uniquely positioned to provide effective corporate communications using its ReadyCam®, a custom, remotely-operated studio that can be installed in your office, conference room or location of choice, and its multi-camera, live-shot studio facilities located in Boston, Philadelphia and Baltimore. VideoLink also operates mobile satellite uplink trucks covering the mid-Atlantic and Northeast regions providing news and sports transmissions.

Many VideoLink customers that utilize our studios require the use of a satellite uplink and/or downlink to get their product to the end user(s). In many cases satellite transmission is the most effective way of reaching their audience. On a daily basis, because of a lack of satellite faculties at its Newton headquarters facility, VideoLink has to use the services of a 3rd party satellite uplink/downlink provider to send and receive signals to/from satellites. There are 2 major cost components of using 3rd party satellite facilities. First the process of getting the video signals to/from a satellite services provider. These providers can potentially be located anywhere in the country. Secondly once you get the signal to the satellite facility, there are charges for the use of that uplink/downlink itself. Both components are charged on an hourly basis and are very expensive.

These costs and convenience factors effects our ability to compete effectively with other production companies who have their own satellite facilities on their premise. Having this ability would allows us to eliminate the need for a 3rd party provider, make us more price competitive, allow our customers to come to one place for their production and transmission needs and provide greater margins for us.

With the 2 new proposed satellite antennas, VideoLink will be able to enhance and increase its abilities to communicate more economically and competitively with our customers who need to communicate via satellite in the United States and around the world.

Howard Miller
President
VideoLink, Inc
1230 Washington Street
Newton, MA 02465
617 340 4120 Office Direct
617 340 4101 Fax
www.VideoLink.tv

ATTACHMENT D

Donald L. Haes, Jr., Ph.D., CHP
Radiation Safety Specialist
MA Radiation Control Program Health Physics Services Provider Registration #65-0017
PO Box 368, Hudson, NH 03051
Voice: 603-303-9959 Fax: 603-386-6315 Email: donald_haes_chp@verizon.net

October 20, 2008

Re: Theoretical RF field calculations for two proposed Videolink, Inc. satellite antennas to be located in Newton, MA.

PURPOSE

I have reviewed the information pertinent to the proposed installation at the above location. In order to determine regulatory compliance, theoretical calculations of maximal radio-frequency [RF] fields have been prepared. The physical conditions are that Videolink, Inc. antennas are proposed to be mounted on a rooftop parking area in Newton, MA (See Figure 1). This report considers the contributions of the proposed transmitters operating at the maximum equipment capacity. The calculated values of power density are presented as a percent of current Maximum Permissible Exposures [%MPE] as adopted by the Federal Communications Commission [FCC] [1,2], and those established by the Massachusetts Department of Public Health [MDPH] [3] (With 100% signifying an acceptable amount).

SUMMARY

Theoretical RF field calculations data for the proposed Videolink, Inc. satellite antenna contributions indicate a maximal potential RF field in the immediate vicinity of the parking area to be within Federal and State guidelines for RF exposure outside of the mounting position handrails. An "RF Notice" sign must be posted in accordance with State and Federal rules. Based on my extensive experience with similar facilities, and the theoretical RF fields I have calculated, it is my expert opinion that this facility would comply with all regulatory guidelines for RF exposure to members of the public with the addition of Videolink, Inc. antennas. Feel free to contact me if you have any questions.

Donald L. Haes, Jr., Ph.D
Certified Health Physicist

Note: The analyses, conclusions and professional opinions are based upon the precise parameters and conditions of this particular site; **Videolink, Inc. satellite antennas to be located in Newton, MA.** Utilization of these analyses, conclusions and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not be sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

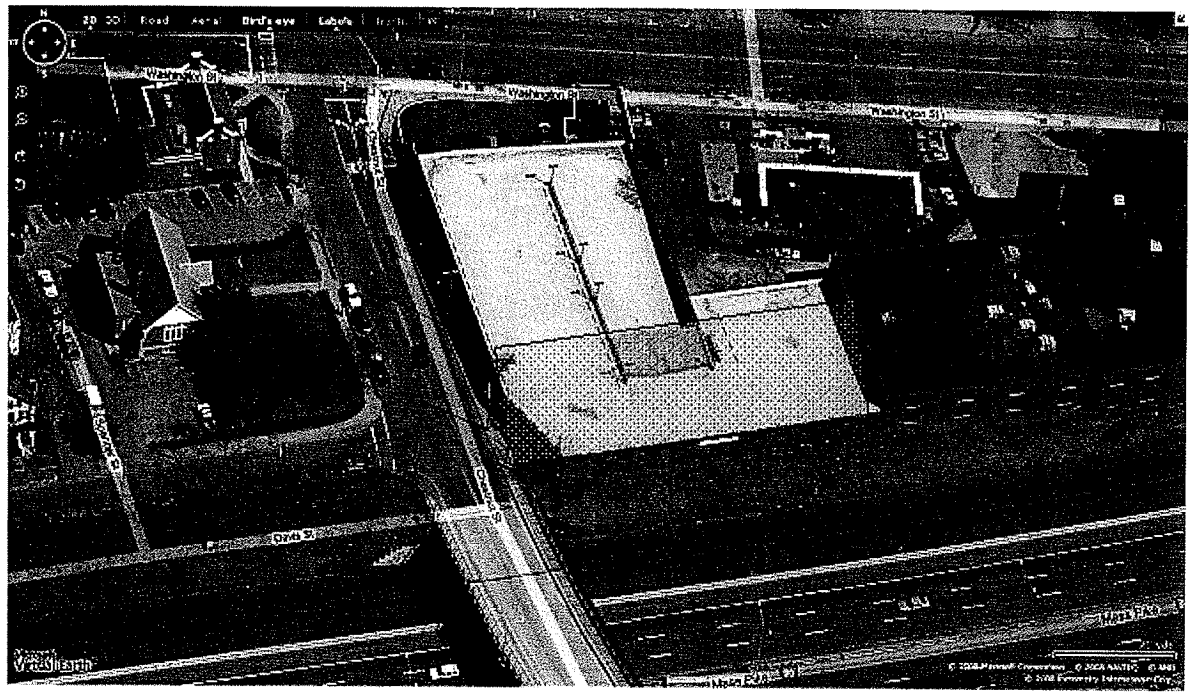


Figure 1: Roof Top Area (shaded in green) Considered in Theoretical Computations (Picture courtesy Microsoft® Virtual Earth™ and may not represent current conditions)

RF EXPOSURE LIMITS AND GUIDELINES

The RF exposure guidelines adopted by the FCC are a combination of the standards published by the American National Standards Institute (ANSI) [4] and the National Council on Radiation Protection and Measurement (NCRP) [5]. The Massachusetts Department of Public Health [MDPH] [3] exposure standards are analogous. Listed in Table I below are the applicable RF exposure guidelines for public areas as they pertain to the operating frequency bands of the proposed facility.

Table I: Maximum Permissible Exposures in Uncontrolled/Public Areas For Emissions from Personal Wireless Services Facilities

Frequency Bands	Maximum Permissible Exposures *
1500 - 100,000 MHz	1000 $\mu W/cm^2$

* For equivalent plane-wave power density, where f is the frequency in MHz.

THEORETICAL RF FIELD CALCULATIONS - ROOFTOP LEVELS

There are some locations on the roof top where personnel may enter areas in near proximity to operating antennas. According to (OET-65)[6]:

> In these cases, the roof-top area is NOT in the *far-field*, but in the *near field* (within a few wavelengths). For these theoretical calculations, a cylindrical model should be used, where "spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the net antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation"...

Therefore, near field power density estimates can be calculated by using the formula:

$$S = \frac{P_{net}}{2 \cdot \pi \cdot R \cdot h}$$

Where: P_{net} → net power to antenna (watts)
R → Distance (range) from antenna
h → aperture height of the antenna

To calculate the % MPE, use is made of the formula:

$$\% \text{ MPE} = \frac{S}{MPE} \cdot 100$$

The calculations performed for this analysis represent the "worst case"; that is, they assume the following:

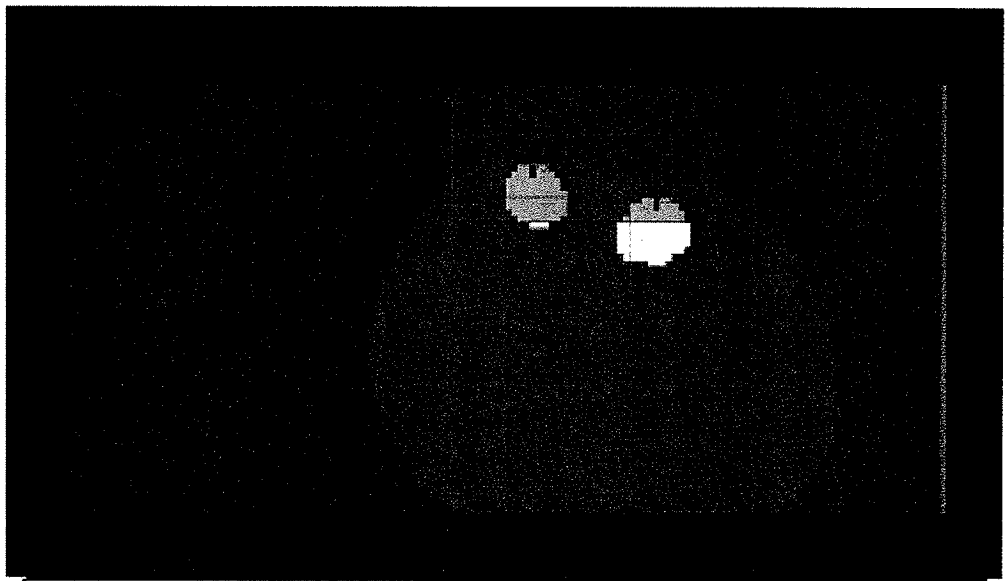
- 100% usage of the antennas at Ku band (Tx: 13.75 - 14.50 GHz).
- Maximum power from the amplifier to the antennas (400 watts).
- Maximum gain from the antennas (53 dBi).
- The antennas are directed toward an area where members of the public could get the closest (due south).
- The antennas are directed towards the horizon, and not aimed at any angle towards the sky.

CONSIDERATIONS WITH SECTIONS §1.1307(B) AND/OR §1.1310 OF FCC RULES

The potential for RF exposure may be mitigated by placing signs, barriers, and warning stripes in areas that exceed the MPEs. Antennas that are not mounted such that the bottom of the antenna is more than two meters above the roof must be cordoned off, have permanent cross hatched markings, or have signs showing safe distance to be maintained (See Figure 3).

RESULTS OF THE THEORETICAL RF FIELD CALCULATIONS

Figure 2 (below) graphically demonstrates the results in %MPE (percent FCC 1997 Maximum Permissible Exposure) for members of the public.



Legend	
	Ground Level
	Satellite Mounting Area (Behind Handrails)
	Roof Area < 5% Maximum Permissible Exposure; FCC Guidelines for members of the public
	Roof Area > 5% but < 20% Percent Maximum Permissible Exposure; FCC Guidelines for members of the public
	Roof Area > 20% but < 100% Maximum Permissible Exposure; FCC Guidelines for members of the public
	Roof Area > 100 Percent Maximum Permissible Exposure; FCC Guidelines for members of the public (max 162% MPE)

Figure 2: Results of Theoretical RF Field Calculations
Each block represents ~ 10 feet; **Not a scalable drawing.**

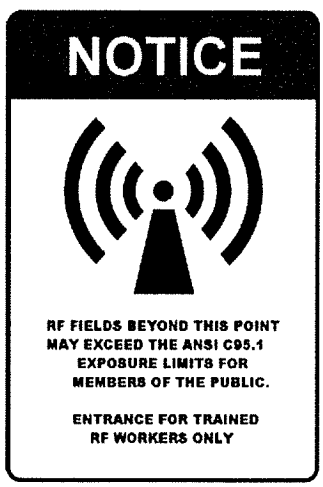


Figure 3: RF "Notice" Sign To Be Mounted On Handrails

ATTACHMENT E

L.G. COPLEY ASSOCIATES Acoustics & Vibration

53 BARRETT ST. • P.O. BOX 920479 • NEEDHAM, MASSACHUSETTS 02492

(781) 455-8814

LGCopley@Verizon.net

23 April, 2009

To:	Dooling Woodbrier Architects, Inc.

Attention: Luis Cetrangolo

From:	Lawrence G. Copley

Subject:	VideoLink – 1230 Washington Street, West Newton, MA Noise Assessment for Proposed Roof-top Antenna

As requested, we have reviewed the roof-top antenna installation being proposed for the VideoLink facility on Washington Street in West Newton. The objective of our review was to assess compliance with the *Noise Control Ordinance of the City of Newton* (Section 20-13. Noise Control, in the City of Newton Code).

The proposed antenna is a 3.8 meter (12 feet) diameter satellite dish. This will be a fixed antenna without any tracking mechanism. The only sources of exterior sound associated with the antenna will be two small fans.

Site Conditions

Figure 1, attached, is an aerial view showing the commercial building located at 1230 Washington Street, with an attached parking structure opening onto Chestnut Street. The antenna is proposed for the roof area marked "A" in the photo. At the south side of the building is the transportation corridor with the turnpike. Immediately adjacent to the building is the railroad utilized by commuter and freight trains. The surrounding uses along Washington and Chestnut Streets are all commercial or public. The site is in a Business-1 zone. A copy of the City assessors reference map is attached.

Across the turnpike there are residences along Austin Street, marked "R" in the photo. These residential uses are at least 150 feet from the proposed antenna location.

Antenna Equipment Sound Levels

The only exterior sound associated with the proposed antenna will come from two small fans. These fans are approximately 5 inches in diameter and each deliver 140 CFM of air flow. (See attached data sheet.) Each fan has a sound rating of 61 dBA at a distance of 1 meter. The combined sound from two fans would be as follows, at different distances:

Distance	Sound Level
10 feet	54 dBA
20 feet	48 dBA
50 feet	40 dBA
100 feet	34 dBA
150 feet	30 dBA

Compliance with Noise Control Ordinance

The City of Newton Noise Control Ordinance requires that equipment sound not exceed a level 9 dBA above the background ambient sound level. It is my opinion that in the vicinity of this site, located next to the turnpike and railroad corridor, the background ambient sound level would never fall below 40 dBA. With this assumed benchmark, the maximum allowable equipment sound level is 49 dBA. In a reasonable interpretation of the Ordinance, this standard would apply at the sidewalk along Washington Street, and also at the residential properties along Austin Street (marked "R" in Fig. 1). From the tabulation above of equipment sound levels, it is apparent that sound from the two fans is estimated to comply with the Ordinance at any distance beyond 20 feet. At the Austin Street residences (150 feet) the fan sound level of 30 dBA would be completely inaudible.

* * *

Based on this analysis, it is my opinion that sound from antenna proposed by VideoLink will not contribute to a violation of the Noise Control Ordinance of the City of Newton; moreover, the sound will not be audible at any sensitive receptor location.

Lawrence G. Copley, Ph.D., P.E.
Member, Institute of Noise Control Engineering

Attached: Fig. 1 – Aerial Photo; Assessors Map; Fan Data Sheet

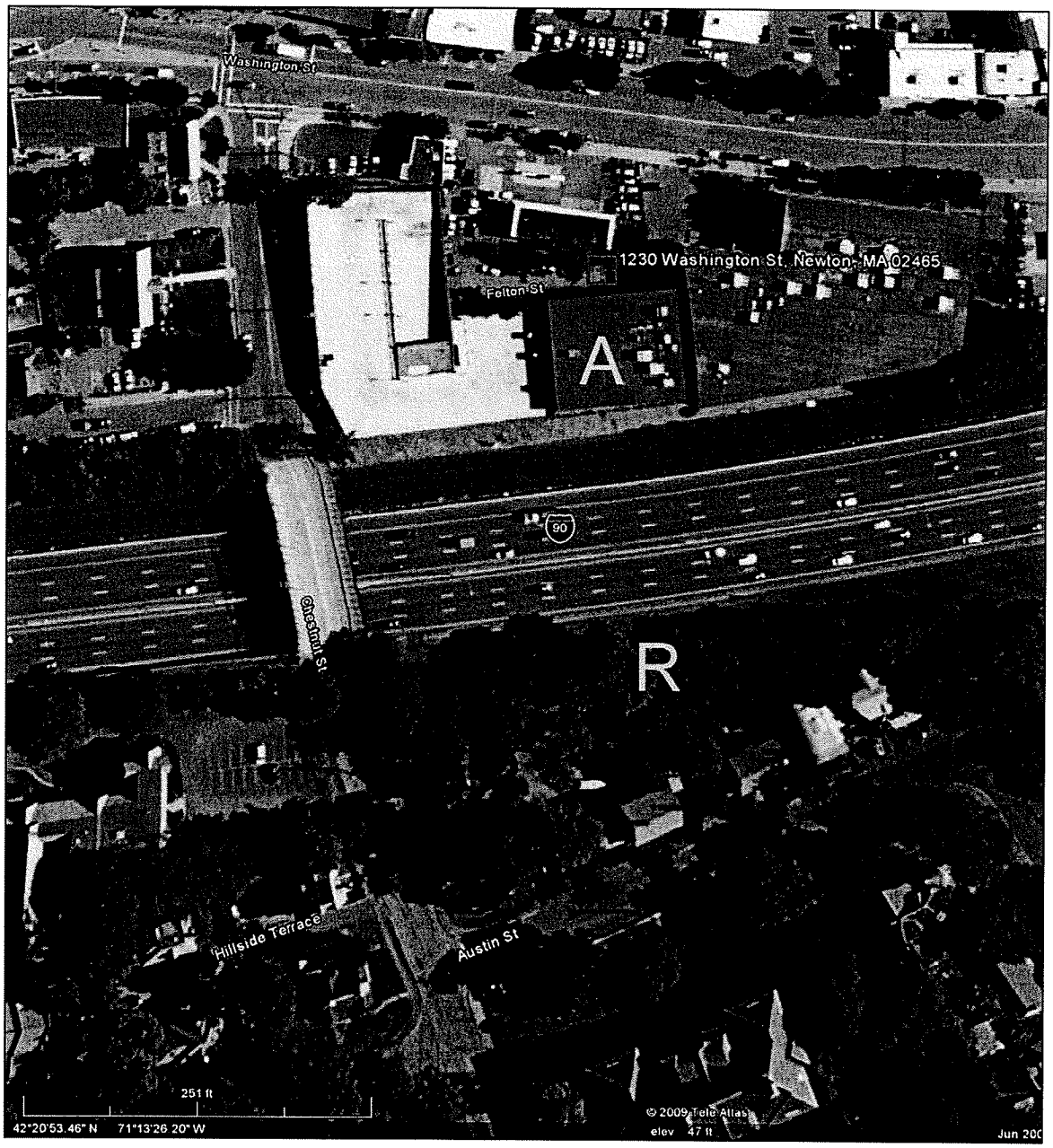
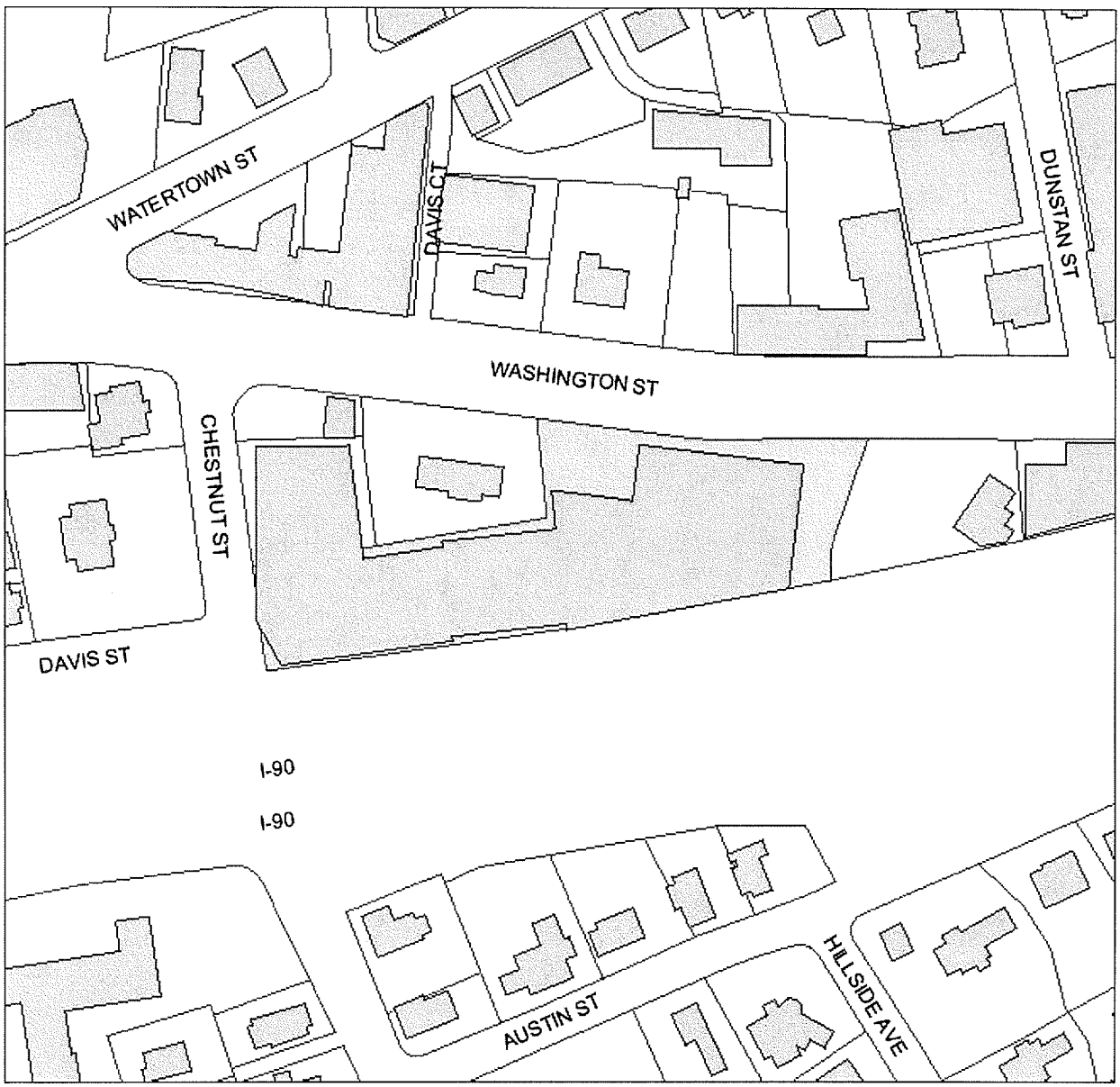


Fig. 1: Aerial Photo of Site and Environs, Showing Proposed Antenna Location ("A"), and Residential Properties Along Austin Street ("R").



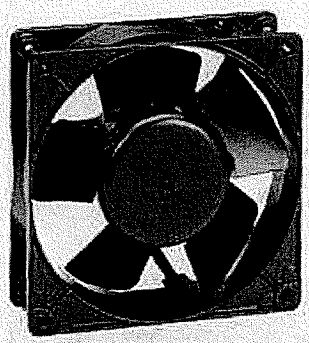
Assessor's Map For:
DIV WASHINGTON LLC
1210-1230 WASHINGTON ST
Neighborhood: 5

CITY OF NEWTON
MASSACHUSETTS
ASSESSING DEPARTMENT
1000 COMMONWEALTH AVE.
NEWTON CENTRE, MA 02459
PHONE: 617-796-1160

4/21/2009

Map for Reference Only
NOT A LEGAL DOCUMENT

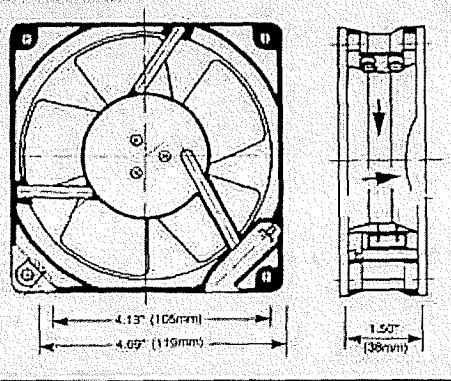
Because of different update schedules, current property assessments may not reflect recent changes to property boundaries. Check with the Board of Assessors to confirm boundaries used at time of assessment.



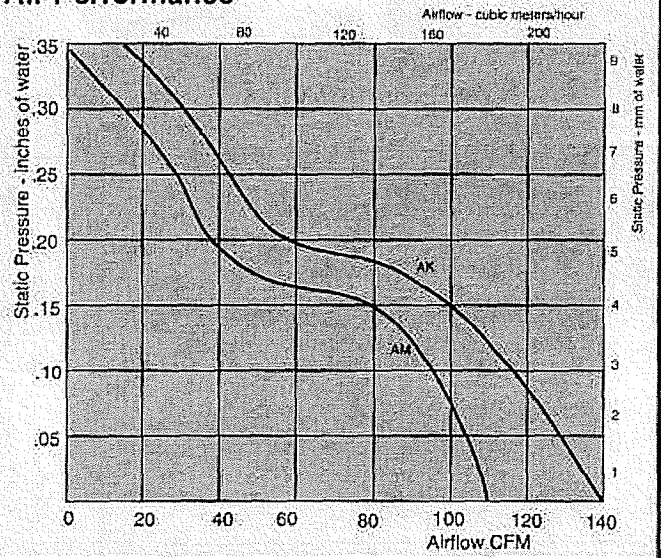
W2G 110
Brushless DC
4-11/16" x 1-1/2"
(119mm x 38mm)

ebm INDUSTRIES, INC.

Dimensions



Air Performance



Ball Bearing Max. Temp. 72°C	DC Volts	Watts	CFM	dBA	PSIL dB	Features	Approvals UL	CSA	VDE
W2G110-AK67-31	12	15	140	61	56	Terminals			
W2G110-AK43-31	24	15	140	61	56	Terminals			
W2G110-AM39-31	12	5.3	110	54	49	Terminals	√	√	√
W2G110-AM39-01	12	5.3	110	54	49	10.5" AWG 22 Leads	√	√	√
W2G110-AM39-92	12	5.3	110	54	49	Hall Effect, Leads	√	√	√
W2G110-AM47-31	24	5.6	110	54	49	Terminals	√	√	√
W2G110-AM47-01	24	5.6	110	54	49	10.5" AWG 22 Leads	√	√	√
W2G110-AM47-92	24	5.6	110	54	49	Hall Effect, Leads	√	√	√
W2G110-AM41-31	48	5.9	110	54	49	Terminals	√	√	√
W2G110-AM41-01	48	5.9	110	54	49	10.5" AWG 22 Leads	√	√	√
W2G110-AM41-92	48	5.9	110	54	49	Hall Effect, Leads	√	√	√

UL yellow card E54522, CSA file LR43145, VDE file 1375

Construction, Mounting & Connection

Mounting: From either face using four .150" (3.8mm) holes.
Weight: 1.15 lbs. (.52kg)
Air Flow: Struts on inlet.
Housing: Aluminum.

Connection: Two polarized spade terminals .110" (2.8mm) wide, .020" (.51mm) thick and .33" (8.5mm) long on .295" (7.5mm) centers. Lead wires color coded: Red (+), blue (-).
Option: Opposite air flow direction.